

REMARKS

Claims 1 and 3-10 are pending in the application. Claim 2 has been canceled. New claims 6-10 have been added.

Drawings

The drawings have been objected to because in Fig. 2, reference number 8, a register, and reference numeral 14, a feeder board, appear to indicate the same part of the drawing.

Applicants respectfully submit that the register 8 is a device for registering (positioning) a sheet-like material transported from the feeder unit 15 via the feeder board 14. In other words, the register 8 is provided between the feeder board 14 and the transfer cylinder 9.

In view of this, Applicants believe that correction to Fig. 2 is not necessary because reference numeral 8 correctly points to a portion between the feeder board 14 and the transfer cylinder 9.

The Examiner is respectfully requested to reconsider and withdraw this drawing objection.

Information Disclosure Statement

The Examiner states that the Information Disclosure Statement filed on September 19, 2001 fails to comply with 37 C.F.R. § 1.98(a)(2) because the document number on the Form PTO-1449 does not match that on the supplied abstract.

Applicants appreciate the noting by the Examiner of the document related to the supplied English abstract in the Examiner's Notice of References Cited.

Request for Initialed Form PTO-1449

In reviewing the application file, the undersigned has noted that the appropriate initialed Form PTO-1449 in response to the Information Disclosure Statement (IDS) filed on August 20, 2001 has not been received by Applicant. The Examiner is therefore requested to return a copy of the initialed Form PTO-1449 to the undersigned as soon as possible.

Specification

The disclosure has been objected to because of some informalities.

The specification has been amended, as suggested by the Examiner, to overcome this objection.

The Examiner is respectfully requested to reconsider and withdraw this objection.

Further, minor changes have been made to the specification to place it in better form for U.S. practice.

Claim Objections

Claims 4-5 have been objected to because of some informalities.

Claim 4 has been amended to overcome this objection.

The Examiner is respectfully requested to reconsider and withdraw this objection.

Claim Rejections - 35 U.S.C. § 112

(a) Claims 1-5 have been rejected under 35 U.S.C. § 112, first paragraph because, in claim 1, it is not clear as to what structure is intended by the "delivery unit" recited in line 9.

The phrase "delivery unit" recited in line 9 of claim 1 has been amended to --delivery pile-- to overcome this rejection. The "delivery pile" is illustrated in Fig. 2 (element "21") and stated in page 8, line 8 of the specification.

The Examiner is respectfully requested to reconsider and withdraw this rejection.

(b) Claims 1-5 have been rejected under 35 U.S.C. § 112, first paragraph because, in claim 1, the recitation of "said quality inspection apparatus comprises" on line 19 is redundant.

Claims 1 and 3-5 have been amended to overcome this rejection.

Claim 2 has been canceled.

The Examiner is respectfully requested to reconsider and withdraw this rejection.

Embodiments of the Present Invention

One of the embodiments of the present invention is directed to a double-sided printing machine that includes: a printing unit for printing opposite faces of a sheet-like material; an inking unit for supplying ink to the printing unit, the inking unit being supported to be brought into contact with and separated from the printing unit; a delivery pile, provided downstream of the printing unit, for collecting the sheet-like material; and a transport unit for transporting the sheet-like material from the printing unit to the delivery pile while holding the sheet-like material.

The transport unit includes a first delivery chain passing through a lower side of the inking unit, first and second transport cylinders, provided adjacent to the delivery pile and arranged in zigzag fashion with respect to a vertical direction, for transporting the sheet-like material from the first delivery chain, and a second delivery chain for transporting the sheet-like material from the first and second transport cylinders; a first detection unit for detecting a status of printing on one face of the sheet-like material when the sheet-like material is transported by the first transport cylinder; and a second detection unit for detecting a status of printing on the other face of the sheet-like

material when the sheet-like material is transported by the second transport cylinder.

Another embodiment of the present invention is directed to a quality inspection apparatus for a double-sided printing machine having a printing unit and a delivery pile provided downstream of the printing unit that include: a transport unit, provided between the printing unit and the delivery pile, for transporting a sheet-like material from the printing unit to the delivery pile. The transport unit includes a first transport cylinder and a second transport cylinder arranged in zigzag with respect to a vertical direction, such that a first space is formed above the first transport cylinder, and a second space is formed below the first transport cylinder; a first detection unit, provided in the first space, for detecting a status of printing on one face of the sheet-like material when the sheet-like material is transported by the first transport cylinder; and a second detection unit, provided in the second space, for detecting a status of printing on the other face of the sheet-like material when the sheet-like material is transported by the second transport cylinder.

Claim Rejections - 35 U.S.C. § 103

(a) Claims 1-2 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Funada (JP01316268) in view of Uno et al. (USP 4,448,121). This rejection is respectfully traversed.

Applicants respectfully submit that it would not have been obvious to one of ordinary skill in the art to modify the printing unit of Funada and quality inspection apparatus of Uno in order to be able to inspect the quality of the printed sheets while transporting them from the printing unit to the delivery unit for the following reasons.

Funada discloses, in Fig. 1, an offset press having a feeder unit 10, a printing unit 50 provided downstream of the feeder unit 10, and a delivery unit 20 provided downstream of the printing unit.

Uno discloses, in Fig. 1, a rotary printing press having a sheet feeder 2, an inspection apparatus 3, having first and second inspection cylinders 12, 13 (correspond to the "first transport cylinder" and the "second transport cylinder" of the claimed invention) and provided downstream of the sheet feeder 2, a rotary printing press 4 provided downstream of the inspection apparatus 3, and a sheet discharging unit 5 provided downstream of the rotary printing press 4. In other words, the inspection apparatus 3 is provided between the sheet feeder 3 and the rotary printing press 4. This arrangement allows detection of defect in unprinted sheets.

Therefore, even if one of ordinary skill in the art was motivated to combine Funada and Uno, he would provide the first and second inspection cylinders 12, 13 of inspection apparatus 3

disclosed in Uno between the feeder unit 10 and the printing unit 50 of Funada and not "adjacent to the delivery pile" as recited in claim 1.

Moreover, Funada fails to disclose or even suggest the "first transport cylinder and a second transport cylinder, provided adjacent to the delivery pile," as recited in claim 1.

Uno, merely discloses the first and second inspection cylinders 12, 13 of the inspection apparatus 3 provided between the sheet feeder 3 and the rotary printing press 4, and fails to disclose or even suggest "first transport cylinder and a second transport cylinder, provided adjacent to the delivery pile," as recited in claim 1.

Therefore, even assuming, arguendo, that Funada and Uno can be combined, Funada in view of Uno fails to disclose or even suggest the "transport means" as recited in claim 1.

Claim 2 has been canceled.

The Examiner is respectfully requested to reconsider and withdraw this art grounds of rejection.

(b) Claim 3 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Funada in view of Uno, and further in view of Reinhard et al. (USP 6,192,140). This rejection is respectfully traversed.

Claim 3, dependent on claim 1, is allowable at least for its dependency upon claim 1.

The Examiner is respectfully requested to reconsider and withdraw this art grounds of rejection.

(c) Claims 4-5 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Funada in view of Uno, and further in view of Giori (USP 4,794,856). This rejection is respectfully traversed.

Claims 4-5, variously dependent on claim 1, are allowable at least for their dependency upon claim 1.

The Examiner is respectfully requested to reconsider and withdraw this art grounds of rejection.

New Claims

New claims 6-10 have been added.

Claim 6 is allowable because none of the prior art of record discloses or even suggests providing, in transport means provided between a printing and a delivery pile, "a first transport cylinder and a second transport cylinder arranged in zigzag with respect to a vertical direction, such that a first space is formed above the first transport cylinder, and a second space is formed below the first transport cylinder," and providing first detection means "in the first space" and second detecting means "in the second space."

Claims 7-9, dependent on claim 6, are allowable at least for their dependency upon claim 6.

Claim 10 is allowable because Giori, which the Examiner has cited to reject claims 4 and 5 directed to the drying means, merely discloses, in Fig. 1b, ultraviolet lamps 24 provided in the periphery of transfer cylinder 23 and fails to disclose or even suggest providing a lamp "on the upstream side, with respect to the transport direction, of a detection position at which said first detection means detects said sheet-like material held by said first transport cylinder," as recited in claim 10.

Further, Giori neither describes nor suggests inspecting both sides of a sheet-like object.

A favorable determination by the Examiner and allowance of these new claims is earnestly solicited.

Conclusion

Accordingly, in view of the above amendments and remarks, reconsideration of the rejections and objections, and allowance of the pending claims are earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Maki Hatsumi (Reg. No. 40,417) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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